

Appl. No. : 09/757,444
Filed : January 9, 2001

¹⁵³
~~195~~. (Amended) The pulse oximeter of Claim ¹⁵⁴~~194~~, wherein the effect of the least squares algorithm upon convergence comprises optimizing the intensity signals for use in calculating oxygen saturation.

¹⁵⁴
~~196~~. (Amended) The pulse oximeter of Claim ¹⁵⁴~~194~~, wherein the intensity signals have at least a desired portion and a noise portion.

¹⁵⁶
~~197~~. (Amended) The pulse oximeter of Claim ¹⁵⁶~~196~~, wherein the effect comprises reducing the noise portion.

¹⁵⁷
~~198~~. (Amended) The pulse oximeter of Claim ¹⁵⁷~~197~~, wherein the noise portion is at least partially uncorrelated to the desired portion.

~~199~~. (Deleted)

¹⁵⁶
~~200~~. (Amended) The pulse oximeter of Claim ¹⁵⁶~~196~~, wherein the noise portion is at least partially caused by motion of a patient.

¹⁵⁹
~~201~~. (Amended) The pulse oximeter of Claim ¹⁵⁹~~200~~, wherein the effect comprises reducing the noise portion.

Remarks

The Applicants thank the Examiner for the Interview on May 1, 2002. In the Interview, the prior art was discussed in general, and how the Claims presented are patentably distinct from the prior art. The Conlon reference was discussed in particular detail. Also discussed were some minor potential objections to the Claims under 35 U.S.C. 112, Second Paragraph. Applicants also further discussed the District Court and Federal Circuit opinions relating to a parent patent, and the ongoing litigation, including non-confidential positions of Nellcor in that litigation. In order to avoid delay, submission of a preemptive Terminal Disclaimer to avoid any possible obviousness-type double patenting rejections was also discussed. Finally, that applicants would be submitting an additional Information Disclosure Statement along with its contents, was also discussed.

Applicant's have amended the Claims as discussed with the Examiner to deal with the potential objections under Section 112, Paragraph 2, raised by the Examiner. In addition, the applicants submit the discussed Terminal Disclaimer and an Information Disclosure Statement.

Appl. No. : 09/757,444
Filed : January 9, 2001

Applicants believe that the present claims are in condition for allowance, and prompt allowance is earnestly solicited. If any issues remain to be resolved, the Examiner is invited to contact the undersigned to promptly resolve the issue.

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

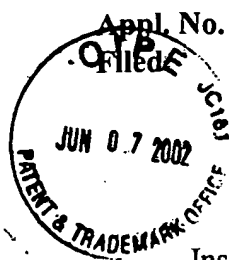
Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: June 7, 2002

By: Stephen C. Jensen
Stephen C. Jensen
Registration No. 35,556
Attorney of Record
620 Newport Center Drive
Sixteenth Floor
Newport Beach, CA 92660
(949) 760-0404

H:\DOCS\SCJ\SCJ-5142.DOC
053002



Appl. No. : 09/757,444
: January 9, 2001

Version with Markings to Show Changes Made

Insertions appear as underlined text, for example, insertions, while deletions appear as strikethrough text, for example, ~~deletions~~

41. (Twice Amended) A pulse oximeter comprising:

at least first and second light emitting devices;

at least one light detector configured to receive light attenuated by transmission through a body tissue with pulsing blood, the at least one light detector acquiring a first signal based on light from the first light emitting device comprising a first desired signal portion and a first undesired signal portion and a second signal based on light from the second light emitting device comprising a second desired signal portion and a second undesired signal portion; and

a closed loop adaptive system responsive to said first and second signals to provide at least first and second output signals for use in calculating oxygen saturation of said blood.

110. (Amended) In a A-pulse oximeter wherein the improvement comprises effecting intensity signals resulting from light of first and second wavelengths attenuated by body tissue carrying pulsing blood ~~are effected by the operation of a least squares algorithm, which intensity signals, once effected, are used in the calculation of oxygen saturation.~~

111. (Amended) The pulse oximeter of Claim 110, wherein the ~~intensity signals are effected to reduce~~ effect comprises reducing noise in the intensity signals.

112. (Amended) The pulse oximeter of Claim 110, wherein further comprising a microprocessor ~~that operates the least squares algorithm, the microprocessor having digital representations of the intensity signals as inputs.~~

171. (Amended) In a A-pulse oximeter wherein the improvement comprises effecting intensity signals resulting from light of first and second wavelengths attenuated by pulsing blood ~~are effected by operation of an algorithm that responds to at least one error signal, wherein the intensity signals, after being effected, are used in the calculation of oxygen saturation.~~

172. (Amended) The pulse oximeter of Claim 171, wherein the effect ~~is comprises~~ reducing noise in the intensity signals.

Appl. No. : 09/757,444
Filed : January 9, 2001

185. (Amended) In a A-pulse oximeter wherein the improvement comprises, comparing a signal and an estimate of the signal ~~are compared~~ in order to produce an effect on intensity signals resulting from light of first and second wavelengths attenuated by pulsing blood, which intensity signals are then used in the calculation of oxygen saturation.

186. (Amended) The pulse oximeter of Claim 185, wherein the effect comprises ~~is~~ reducing noise in the intensity signals.

194. (Amended) In a pulse oximeter, wherein the improvement comprises a processor that adjusts its own transfer function using a least squares algorithm to effect intensity signals resulting from light of first and second wavelengths attenuated by pulsing blood in a patient.

195. (Amended) The pulse oximeter processor of Claim 194, wherein the effect of the least squares algorithm upon convergence comprises optimizing ~~is to optimize~~ the intensity signals for use in calculating oxygen saturation.

196. (Amended) The pulse oximeter processor of Claim 194, wherein the intensity signals have at least a desired portion and a noise portion.

197. (Amended) The pulse oximeter processor of Claim 196, wherein the effect comprises reducing ~~is to reduce~~ the noise portion.

198. (Amended) The pulse oximeter processor of Claim 197, wherein the noise portion is at least partially uncorrelated to the desired portion.

199. (Deleted)

200. (Amended) The pulse oximeter processor of Claim 196, wherein the noise portion is at least partially caused by motion of a patient.

201. (Amended) The pulse oximeter processor of Claim 200, wherein the effect comprises reducing ~~is to reduce~~ the noise portion.